

CSC/SETI Institute Colloquium Series



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**Wednesday, Jan. 30, 12:00 noon
The SETI Institute, Europa room**

Anomaly Detection in Data Streams and its Implications for Radio Astronomy and SETI

Recent advances in data mining have enabled the detection of anomalies in massive time series data sets. These techniques range from analysis of individual time series to multidimensional analysis of streaming data.

A key issue in anomaly detection is characterizing the expected signal from the unexpected signal. In many situations, these characterizations can be made based on a physical understanding of the data generating process. In the context of SETI@home, the software searches for spikes in the power spectra, Gaussian rises and falls in transmission power, triplets, and pulsing signals. While these signals are well motivated based on our current knowledge of communications systems, we discuss methods of anomaly detection that do not rely on strong assumptions of the data generating process.

This talk will cover recent algorithmic developments in anomaly detection with applications to SETI.



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